Doc Code: AP.PRE.REQ

PTO/SB/33 (08-08)
Approved for use through 09/30/2008. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
252011-2200

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on _____

Signature _____

Typed or printed name _____

Application Number	Filed
10/820,410	April 8, 2004

First Named Inventor
Yi-Cheng Liu

Art Unit	Examiner
2169	Spieler, William

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

☑ attorney or agent of record. Registration number 38,962.

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/Daniel R. McClure/
Signature

Daniel R. McClure
Typed or printed name

770-933-9500
Telephone number

January 26, 2009
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Yi-Cheng Liu

Serial No.: 10/820,410

Filed: April 8, 2004

Confirmation No. 7813

Group Art Unit: 4141

Examiner: Spieler, William

TKHR Ref. 252011-2200
Top-Team Ref. 0503-A30243US

For: **Process Scheduling System and Method**

REMARKS IN SUPPORT OF PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop – Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

The following remarks are provided in support of the accompanying pre-appeal brief request for review.

Rejections under 35 U.S.C 103(a)

Claims 1, 3, 6, 8, 10, 13, 15, 17, and 20 were rejected under 35 U.S.C 103(a) as allegedly being unpatentable over Butt et al. (U.S. Pat. No. 5,889,944) in view of Yamagashi (U.S. Pat. No. 5,870,604), Aref et al. (U.S. Pat. No. 6,023,720), and Bigus (U.S. Pat. No. 5,442,730). Applicant respectfully submits that these rejections are misplaced.

In regard to claims 1, 8 and 15, Butt, Yamagashi, Aref and Bigus collectively do not teach all claimed features. In this regard, Butt, Yamagashi, Aref and Bigus fail to

disclose, suggest, or teach, *inter alia*, the following highlighted features expressly recited by independent claims 1, 8, and 15:

> "fetching resource status data of at least one resource item of the application system, wherein the resource item comprises a central processing unit (CPU) and a disk of the application system, and *the resource status data comprises data for the CPU use rate and* ***data for the disk use rate***";
> "*determining* ***an execution time point*** *for at least one process according to the resource status data using a neural network model,* ***wherein the CPU use rate, the disk use rate and a peak time interval are adopted as processing elements of the neural network model,*** and the resource status data is fed to the neural network model for calculating the execution time point for the process"; and
> "*determining whether* ***the execution time point*** *for the process is present,* and *when the execution time point for the process is present, executing the process at the execution time point*".

Simply stated, the Examiner has misapplied the cited art with respect to the above-emphasized features.

First, the Examiner asserted that the claimed feature of determining an execution time point for at least one process according to the resource status data has been disclosed by Butt. Applicant respectfully disagrees. In the claimed embodiments, a time point is calculated (*i.e.*, determined) for the process. Col. 4, lines 44-51 of Butt states: "If the resource is not free, in a step S12, the job is placed on a queue (the holding queue) of jobs which are waiting for a resource to become free. Some jobs are scheduled for execution at a later time. If it is found in step S11 that the resource is free, in a step S13 a check is made to determine if the job is scheduled for execution at a later time". Significantly, no time point is calculated (*i.e.*, determined) in Butt. The execution of jobs depends on whether the resource is free or not. Thus, nowhere in Butt does it disclose the claimed feature of "determining an execution time point for at least one process". For at least this reason, the rejections should be overturned.

Additionally, the Examiner asserted that the claimed feature of *determining whether the execution time point for the process is present*, and *when the execution time*

point for the process is present, executing the process at the execution time point have been disclosed by Butt. Applicant respectfully disagrees. As expressly define in the claims, a time point is calculated for the process. *The trigger module only needs to check timer and determine whether the determined execution time point is present, and trigger the process to be executed when the determined execution time point is present.* Col. 4, lines 21-22 of the Butt reference reads "If a job can be executed immediately, it is passed to the module SMAN which loads it on to a server". Butt does not teach the claimed feature, but rather only relevantly teaches that when the job can be executed, it can be loaded to the server for execution. It is understood that, in Butt, *the status of the resource must be always monitored to determine whether the resource is free or not.* If the resource is free, the job can be executed. This is different from the claimed embodiments, and nowhere in Butt does it disclose the claimed feature of "*determining whether the execution time point for the process is present, and when the execution time point for the process is present, executing the process at the execution time point".*

Further still, the Examiner asserted that "It would have been obvious to one ordinary skill in the art at the time the invention was made to combine the teaching of Aref with that of Butt and Yamagashi, as the disk i/o throughput can have a large effect on system performance. Applicant respectfully disagrees. The term "disk use rate" of the claimed embodiment cannot be properly equated to the disk i/o throughput, as asserted by the Examiner. In the claimed embodiments, the resource item comprises a central processing unit and a disk of the application system, and the resource status data comprises data for the CPU use rate and data for the disk use rate. As previously explained, "disk use rate" means the occupation situation of the disc. The occupation situation of the disc may be a ratio relative to the total size of the disc. The disk i/o throughput, however, is the input/output quantity of the disc relative to a time unit, which is patentably different from the claimed invention.

Additionally, col. 5, lines 26-35 of Aref states: "This solution has been found to have several drawbacks. First, batching a large number of writes to increase the disk bandwidth utilization (by reducing seek time) may lead to either an increased likelihood of the system violating the deadline of newly arrived read requests or starvation of the write requests. Also, interrupting the SCAN order of currently existing reads to schedule writes may increase the average seek time and lower disk utilization. This increases the overall delay of read requests at the server, leading to a reduction in QOS, as observed by the application." It is clear that Aref introduces batching a large number of writes will increase the disk bandwidth utilization, and interrupting the SCAN order of currently existing reads to schedule writes may lower disk utilization. Aref only relevantly introduces the basic concept and results on the disk and bandwidth thereof when applying reads/writes to a disc. As previously explained, the objective of Aref is to support simultaneous read and write requests in the presence of real-time requirements and high bandwidth demands. Various embodiments of the invention dynamically calculate an execution time point for a process according to the resource status of the resource item, which is patentably distinguished from Aref. Nowhere does Aref discloses the disk situation (disk use rate) can be used to schedule a process.

Further, the Examiner asserts that Bigus teaches the use of a neural network model for timing which runs outside a peak time interval. The applicant respectfully disagrees. The claimed embodiments recite: "optimize the scheduling of a process on an application system under the general limited factors". In the claimed embodiments, the CPU use rate, the disk use rate and a peak time interval are input (parameters) of the neural network for calculating the execution time point of a process. As explained previously, Bigus discloses a neural network is used for job schedule. No additional details are discussed in Bigus. In Bigus, Figs. 6A and 6B illustrate steps required to construct a delay cost function. Col. 8, lines 45-47 of Bigus states: "Since the training steps of FIGS. 6A and 6B may be performed at any arbitrary time, training may be

deferred to a time when computer system 100 is not busy." It is clear that Bigus only relevantly teaches the training steps of FIGS. 6A and 6B can be performed when computer system 100 is not busy. The parameter of "when computer system is not busy" or "the time where computer system is not busy" is not used to calculate the scheduling result, such as the execution time point, as claimed. Nowhere does Bigus disclose or teach the resource status data (CPU use rate and the disk use rate) and the peak time interval of the application system can be integrated to the neural network for job scheduling.

Since Butt, Yamagashi, Aref and Bigus fail to teach the above claimed features, independent claims 1, 8, and 15 are patentable over the cited combination. Insofar as all remaining claims depend from claim 1, 8, or 15, all claims patently define over the cited art for the same reasons. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

In view of the foregoing, it is believed that all pending claims are in proper condition for allowance.

A credit card authorization is provided herewith to cover the fees associated with the accompanying Notice of Appeal. No additional fee is believed to be due in connection with this submission. If, however, any additional fee is deemed to be payable, you are hereby authorized to charge any such fee to Deposit Account No. 20-0778.

Respectfully submitted,

/Daniel R. McClure/

By: _____

Daniel R. McClure, Reg. No. 38,962

THOMAS, KAYDEN, HORSTEMEYER & RISLEY, L.L.P.
600 Galleria Parkway
Suite 1500
Atlanta, Georgia 30339-5948
(770) 933-9500